

best to peck out each other's eyes, or tearing out the weathered red roof tiles.

Before returning to the north coast, we made the trip by automobile to Tegucigalpa, which lies only 60 miles from the Pacific and the picturesque port of Amapala, where I collected plants seven years earlier. The road to the capital, although too long and tedious, from the standpoint of transportation, and too often disagreeably dusty, is nevertheless fascinating to a botanist. For most of its length it runs through the somewhat monotonous Pine-clad mountains, climbing laboriously to a crest, then descending precipitously down another slope. One of its most impressive vistas is that across the wide valley of Comayagua, shortly beyond Siguatepeque. Never shall I forget that early morning breakfast at Sambrano, high in the Pine forests, just before the valley was reached. How cold it was just after daybreak, and how pure and bracing the air, like that of our own Rocky Mountains.

The Comayagua Valley is perhaps 50 miles across, and shut in by high hazy mountains on every side. These mountains bar the rain clouds, and the valley receives but scant rainfall—none at all, of course, during the winter, or dry season. Its general aspect is parched, and one is reminded inevitably of the famous and larger Zacapa Desert of northern Guatemala, or of the arid areas along the Pacific coast of Guatemala, and Salvador. There is the same scrubby thorn forest, of Leguminosae and other shrubs and small trees, many of which shed their leaves when the rains cease. There is little herbaceous vegetation in evidence during the dry period, although doubtless there is enough when the rains are falling almost daily, in midsummer. There are many steep exposed slopes and rocks, decorated with a stately Agave, one of the handsomest of the genus that I have ever seen. Its compact bluish clusters of neat spiny leaves form a fitting pedestal for the sturdy flower stalks and their ample panicles of yellow flowers. There are Furcraeas, too, and such a profusion of Cactuses as one finds only in Mexico, or about Zacapa in Guatemala. The arborescent forms are not so varied, but there is one columnar *Cereus* of the subgenus *Cephalocereus*, whose few thick branches are topped with straggling masses of long white hair. Still more imposing are the tree Opuntias, some of which are symmetrical trees 20 to 30 feet high, with clean trunks and dense rounded crowns of large pads. Low Opuntias grow over the plains, and there are various other Cactuses, particularly a large *Echinocactus* of the barrel cactus type.

Here and there through the brushland trees were coming into bloom at the time of our visit. Vines of the Bignoniaceae were draped in purple festoons over low trees, and blue *Petrea* supplied a welcome dash of color. The Tabebuias presented vivid masses of blossoms above the withered leaves. The rose and purple of the Macuelizo (*Tabebuia pentaphylla*), one of the finest of all Central American trees, were more

conspicuous than anything else, and its relative, the Cortez (*T. chrysantha*), was equally brilliant in yellow. Madre de Cacao (*Gliricidia sepium*) trees, despite their pink flowers, recalled our Black Locust, a very close relative. Bullhorn Acacias grew here and there, with the giant Sandbox (*Hura crepitans*), whose milky sap is one of the local fish poisons. Fantastic Calabash trees (*Crescentia Cujete*) with pumpkin-like fruits were neighbors of most of the dwellings, and a few Lignumvitae (*Guaiacum*) trees were visible beyond the sleepy old town of Comayagua, once the capital of Honduras. Not the least conspicuous tree of the hillsides was the Tree Morning-glory (*Ipomoea arborescens*), with its smooth chalky bark and milk-white trumpets.

Toward Tegucigalpa there were more pine- and oak-forested hills, like those about Siguatepeque, alternating with valleys almost but not quite so arid as the desert of Comayagua. Although the Agave which I mentioned is widely distributed, I did not see any considerable number of Cactuses except about Comayagua.

The vegetation about the capital I could not investigate for lack of time, but from the road it appeared sparse and rather uninteresting. The city itself lies in a picturesque but not very agreeable site, almost in a pit, shut in by bleak mountains.

But to return to Siguatepeque, where I spent but too few days, considering the comfort and the rich collecting to be found there. The list here presented of the woody plants observed about Siguatepeque, now that I have compiled it, seems rather common-place, but the plants did not seem so when I saw them growing. I am sure that the list can be amplified substantially by further exploration extended over a somewhat wider area, especially if carried on during the rainy season. It must be remembered that in the Pine regions the great majority of species are herbaceous plants, especially Grasses and Sedges, and of these I collected a large number, including innumerable interesting forms.

Siguatepeque lies in a wide valley, at an elevation of about 1,100 meters, encircled on every side by fairly or very steep mountains, some of which must rise to 2,700 meters. The highest mountains, unfortunately, I did not have time to explore. They are so difficult of access that more than the two weeks I had available would be necessary to get any comprehensive idea of the nature of their vegetation.

The valley is quite typical of what I saw elsewhere in central Honduras. Its soil is pitifully sterile, a stiff clay which pulverizes into suffocating dust along the more traveled roads. There is a general belief elsewhere in Central America that Honduras is a rich but undeveloped agricultural region, awaiting only colonists to become a center of coffee production. No doubt there are parts of Honduras which have rich agricultural possibilities, but the country which I saw certainly will not produce coffee, and I do not believe that the most of it will ever be useful except for grazing, and not too good for that.

The Siguatepeque basin is watered well enough, by superlatively meandering streams which reappear in such unexpected directions that one can scarcely believe it when told that this is the same stream crossed previously in some distant part of the valley. The valley floor is a wide plain, with a thick growth of grass, on which the neighborhood cattle and horses pasture. Everywhere through the grass there springs up during the rainy season such a bewildering variety of tiny herbaceous plants that it seems impossible to exhaust them. I was reminded of the similar savannas which stretch beyond Panama City, and yield upon every visit some addition to their recorded flora.

Here and there over the plains are low boggy places, which in wet weather must be a true paradise for a patient botanist. Along the streams, some of which run over ledges of white stone, are narrow thickets of shrubbery and small trees, yielding a large number of species, some of them abundant and others represented only by one individual here and another far away. On the grassy plains there are only a few spiny bushes, principally Acacias. All this valley must have been modified greatly by cultivation and settlement, but how much, it is impossible to decide. Probably it was covered once with Pine and Oak trees, but this is by no means certain. In some localities there are low thickets of scrub Oaks, like similar growths in New Mexico, or in the Ozarks.

The mountain sides above Siguatepeque are the most interesting portion of the region. Even the lower slopes are still forested with Pine, for although some trees have been cut, there is only a small local demand for the timber, and no reason for cutting the trees.

The general appearance of these Pine forests is homelike to one who knows the Yellow Pine forests of the southern Rockies, in Colorado and New Mexico. The pines look just the same, also the undergrowth, consisting chiefly of low wiry grasses of the same genera which grow in New Mexico, with a generous admixture of showy-flowered herbaceous plants not very different from those of the Rockies. Salvias and Cupheas, and yellow-flowered composites, similar to Rudbeckias and Sunflowers, are most abundant. The superficial resemblance is heightened still further by colonies of Bracken (*Pteridium*), of a species different from the New Mexican one but still identical in aspect.

Small swift streams run down the slopes, and the dense thickets fringing them resemble the Rocky Mountain Alder thickets, although the genera represented are unknown in the United States, at least for the most part. Along the stream banks there are a few Orchids, of tropical rather than temperate types, and with them Ferns which would certainly be out of place in the United States. One of them is a stemless tree fern whose leaf bases are covered with thick wads of brown scales, like felt. These soft scales, or lana, are used everywhere in the region for stuffing pillows, and they make a satisfactory substitute, as I learned from experience.

The higher one goes in the mountains, the more interesting the vegetation becomes. I rode one day up toward the summit with a man who knew the region well. It was delightful to ride along the easy slopes, over a carpet of grass and pine needles liberally sprinkled with pretty flowers. The country was so open that it was not necessary to follow a road or trail, but only to know the objective of one's excursion.

We arrived about noon at a hut high up in the forest, where the vegetation was quite different from what I had seen lower down about Siguatepeque. Along the way the increasing abundance of Ferns, Orchids, and gaudy Bromeliads on the oak trees had proved that we were approaching an area of greater moisture than prevails about the town in the valley. We received tangible proof of the moisture in a mild rainstorm which overtook us before we reached our goal.

At this high altitude most of the trees were Pines, but another species (*Pinus pseudostrobus*) had made its appearance, a graceful tree with drooping leaves and branches, which did not look at all like the yellow Pine of the Rockies. There was a much denser undergrowth, and almost as many broad-leaved trees as Pines. Here at El Achote I saw for the first time an abundance of Liquidambar, a tree of almost unprecedented distribution among American species. It appeared quite familiar, although perhaps taller and more slender than it usually grows in the United States. With it grew *Ostrya*, and the Central American Elm (*Chaetoptelea mexicana*), but most of the other trees were evidently tropical or subtropical. The temperate element was represented also among the herbaceous plants, for in a small bog near our stopping place grew both the Royal and Cinnamon Ferns. The Royal Fern I had seen previously in Costa Rica, in a similar situation, and here in Honduras was one of its Costa Rican associates, the red-flowered terrestrial *Epidendrum radicans*, the commonest Orchid of Central Costa Rica, which I had never found elsewhere in Central America.

As these high mountains are viewed from Siguatepeque, there appears a wide belt of deep green near their summits, above the more vivid green of the Pines. I am informed that this zone consists of hardwood trees, and if this is true, there is little doubt that a rich harvest of new and rare species will be made by the botanist who visits it first.

The list of woody plants here published is probably typical of the ligneous flora of many similar regions of like altitude through central Honduras, Guatemala, and Nicaragua. Such Pine forests as these do not possess so rich a flora as the wet tropical belts, but they do yield a great deal to reward exploration. They are little known, and they are comfortable and healthful regions in which to work. The climate of Siguatepeque is a delightful one, as pleasant as that of Cartago in Costa Rica, although Cartago's elevation is substantially greater.

The species listed on the following pages are of diverse origin. On the whole, the Siguatepeque flora seems to be related closely to that of

the mountains of southern and central Mexico. There is very little to remind one of Costa Rica or Panama, principally because those countries have no Pine trees, and ordinarily but little grassland. The region did not remind me greatly, either, of nearby Salvador, although northern Salvador, along the Honduran border, must have a very similar flora, as indicated by collections made there recently by Dr. Salvador Calderón.

PINACEAE

Pinus oocarpa Schiede. PINO OCOTE. The common Pine of the mountains of central Honduras, covering all the lower slopes of the mountains in the vicinity of Siguatepeque. In the Tela region Pines do not reach the coast, as they do in some parts of Central America, and they are not seen until one travels 50 miles inland. From that point all the way along the automobile road to Tegucigalpa, except for the hot Comayagua Valley, they are the dominating tree.

In their general appearance the forests of *Pinus oocarpa* are almost exactly like the Yellow Pine forests of the Rocky Mountains. But little of the available timber is utilized because of lack of transportation facilities. For local building purposes other materials, especially adobes, are preferred to wooden construction. About Siguatepeque I saw men sawing out pine boards by hand, the logs supported upon a stage and the saw operated by two men, one above and one below the log. Turpentine is sometimes collected in small amounts, but it has not proved to be a profitable industry.

Pinus pseudostrobus Lindl. PINAVETE. A large tree with drooping needles. Abundant at higher altitudes, as about El Achote, associated with numerous hardwood trees.

Cupressus Benthamii Endl. CIPRÉS. This Cypress is planted here for shade, as it is throughout Central America, especially in Guatemala City. It is native in Mexico and perhaps also in Guatemala.

GRAMINEAE

Bambusa vulgaris Schrad., var. BAMBÚ. The form of this Asiatic plant with yellow stems is planted frequently. The trunks are used for poles and for various other purposes.

PALMACEAE

Chamaedorea sp. A small Palm, the slender reedlike stems about 1 m. high; growing in a thicket along a stream near Siguatepeque. The species represented is near *C. pacaya* Oerst., but I have been unable to determine it more accurately.

Cocos nucifera L. COCO. A few coconut palms are planted about Siguatepeque, but although they have attained a fair size, they have never flowered.

Acrocomia mexicana Karw. COYOL. A few trees are planted in the

vicinity. The tree grows wild only at lower altitudes than that of the Siguatepeque Valley.

Phoenix dactylifera L. DÁTIL. A few Date Palms are planted, and have grown well. They flower but the fruits do not mature properly. Date Palms are seldom seen in Central America, although they might be expected to thrive in the drier regions.

A fan palm called "Suyate" is planted occasionally about Siguatepeque, but no specimens of it were obtained, and its identity is uncertain.

LILIACEAE

Yucca elephantipes Regel. IzOTE. This handsome arborescent Yucca is planted here, as it is almost throughout Central America. It is not native in the region, but probably was brought long ago from Mexico. The young flowers are cooked and eaten, and form a very palatable vegetable.

Smilax tomentosa HBK. A small unarmed vine, in thickets along streams.

PIPERACEAE

Piper achoteanum Trel. in Jour. Washington Acad. Sci. 19: 328 (1929). Type collected in a wet thicket in Pine forest at El Achote, no. 56125. A shrub 2-3 m. high, with nearly sessile, narrow, very rough leaves.

Piper alveolatifolium Trel. in Jour. Washington Acad. Sci. 19: 329 (1929). Type collected in a thicket along a stream near Siguatepeque, no. 56344. A shrub 3 m. high. The very handsome leaves are notable for their closely reticulate veins, and, as Pipers go, the species is an exceptionally well-marked one.

Piper indignum Trel. in Jour. Washington Acad. Sci. 19: 333 (1929). Type collected in a moist thicket near Siguatepeque, no. 55990. A dense shrub 1.5 m. high with densely pubescent leaves.

Piper nonconformans Trel. in Jour. Washington Acad. Sci. 19: 334 (1929). Type collected in Pine forest near Siguatepeque, no. 55906. A shrub of 2 m.

Piper umbellatum L. Plants shrubby or almost wholly herbaceous, commonly about a meter high; frequent in thickets.

SALICACEAE

Salix chilensis Mol. SAUCE. A medium-sized tree, frequent along streams. It grows also in the lowlands at sea level. This is the only native American species of *Salix* growing south of Guatemala.

MYRICACEAE

Myrica mexicana Willd. CERA VEGETAL. Common in thickets and along streams. A tree 4.5-6 meters high. This species is common in many of the Central American mountains, and in some regions the wax separated from the fruits by boiling is used for making candles and other articles.

BETULACEAE

Ostrya virginiana var. *guatemalensis* (Winkl.) Macbride. A large or medium-sized tree, growing in the higher mountains, apparently rather common. This is probably about the southern limit of the range of the hop hornbeam.

FAGACEAE

Quercus comayaguana Trelease, sp. nov.¹ (§ *Erythrobalanus*, *Aristatae*).

Twigs moderate (3–4 mm.), fluted, matted-gray-tomentose or lanate, reddish if abraded young; leaves (evergreen?) lanceolate-oblong, acute, subaristate from the midrib, cordulate, moderate (4–5 x 12–15 cm.), slightly glossy; veins about 12 x 2, forking and looped; petiole tomentulose or glabrous; inflorescence and fruit unknown.

HONDURAS: a small tree in thicket along stream, Siguatepeque, Dept. Comayagua, alt. 1,100 m., *Paul C. Standley*, no. 56229, February, 1928 (Herb. Field Mus. No. 581,423, type); also no. 56364, from the same locality.—WM. TRELEASE.

A small tree, seldom more than 9 m. high, common along streams about Siguatepeque. The evergreen leaves are narrow and entire or nearly so.

Quercus hondurensis Trel. ENCINO. A tree 6–12 m. high, common on the pine-clad hills about El Achote. The branches are often heavily covered with Ferns, Bromeliads, Orchids, and other epiphytes. The type of this species was collected in the region of San Pedro Sula.

Quercus segoviensis Liebm. ROBLE. A shrub or tree 2–9 m. high, abundant on the plains and lower hills about Siguatepeque, usually associated with Pines. Often forming large dense thickets on the plains, with most of the plants mere shrubs 1–2 m. high.

Quercus siguatepequeana Trelease, sp. nov.² (§ *Erythrobalanus*, *Aristatae*).

Twigs rather slender (2–4 mm.), fluted, glabrous, quickly dull gray, with inconspicuous concolorous lenticels; buds brown, glabrous, finally glossy, suboblong, obtuse, appressed; leaves persistent, subelliptic to spatulate-oblong, very obtuse, rounded at the base or subcordulate, entire, somewhat crisped, narrowly callous-revolute, moderate (3–4 x 10–16 cm.), rather glossy, glabrous; veins 8–12 x 2, forking and looped; petiole glabrous, reddish, 2 x 5 mm.; inflorescence and fruit unknown.

HONDURAS: in thicket along stream, a tree of 9 m., Siguatepeque, Dept. Comayagua, alt. 1,100 m., *Paul C. Standley*, no. 56393, February, 1928 (Herb. Field Mus. no. 581,663, type); El Achote, at 1,500 m., *Paul C. Standley*, no. 56179.—WM. TRELEASE.

¹ *Quercus comayaguana* Trelease, sp. nov.

Ramuli griseo-tomentosi vel lanati; folia lanceolato-oblonga, acuta, basi cordulata, mediocria, sublucida, petiolo tomentuloso vel glabro; inflorescentia ut fructus ignota.

² *Quercus siguatepequeana* Trelease, sp. nov.

Ramuli graciles glabri, cito grisei, lenticellis inconspicuis concoloribus; folia persistentia, subelliptica vel spatulato-oblonga, obtusissima, basi rotundata vel subcordulata, integra, subcrispata, anguste callosa-revoluta, sublucida, glabra, petiolo glabro; inflorescentia ut fructus ignota.

A tree about 9 m. high, common about Siguatepeque and El Achote and known as Encino. The bark of this and other Oaks is employed locally for tanning skins.

ULMACEAE

Chaetoptelea mexicana Liebm. MORA. A medium-sized or large tree, growing in the wet zone of the higher mountains. Although *Chaetoptelea* is referred by some writers to *Ulmus*, it seems to me to have fairly good distinctive characters in the fruit. In habit it is not very like our northern Elms, and it occurs well outside the range of the genus *Ulmus* proper. I am somewhat skeptical regarding the vernacular name cited, which usually is given to trees of the Mulberry Family, especially to the Fustic (*Chlorophora tinctoria*).

MORACEAE

Castilla elastica Cerv. ULE, HULE. A few trees are planted about the fincas around Siguatepeque. The tree is native in the forests at lower altitudes, where it is tapped for its rubber.

Morus multicaulis Perr. MORERA. A good many small trees of this Mulberry have been planted about Siguatepeque, with the intention of using the leaves as food for silkworms.

Ficus inamoena Standl. A small tree in pine forest; known previously only from Guatemala. A well-marked species with densely pubescent leaves. A pine forest is a most unusual habit for a Fig, most of the species growing at low altitudes in wet forests.

Ficus involuta (Liebm.) Miq. HIGO. A tree 6-9 m. high, in pine forest. The species is widely distributed in Central America, and grows along the north coast of Honduras at sea level.

Ficus padifolia HBK. A tree 9 m. high, growing along a stream; fruit green, spotted with dark red. Probably the most common and certainly one of the handsomest of the Central American Figs.

Ficus velutina Willd. A tree 9 m. high, not found in fruit; growing at the edge of a stream and spreading over the water.

Ficus radula Willd. HIGO. A tree of 10 m., in moist thickets. One of the common and widely distributed species of Central America, often growing at sea level.

Ficus Carica L. HIGO. The Old World Fig is planted in various places about Siguatepeque, and seems to thrive. It is little grown in most parts of Central America, although it flourishes in the drier regions of Mexico. At Siguatepeque I sampled dried figs of good quality which had been prepared by a local resident.

PROTEACEAE

Grevillea robusta Cunn. GRAVILEA. The Australian Silk-oak is planted here as well as in most of the upland Central American towns. Although it is far from handsome, as it usually grows, it seems to be a great favorite for planting in parks and streets.

AMARANTHACEAE

Iresine Calea (Ibáñez) Standl. A shrub of 1–1.5 m., frequent in moist thickets.

RANUNCULACEAE

Clematis grossa Benth. A large vine, running over shrubs in thickets along the river.

ANNONACEAE

Annona Cherimola Mill. ANONA. A shrub or small tree, rarely exceeding 7.5 m. in height, with greenish flowers. It is planted for its edible fruit, and it also grows wild in thickets about Siguatepeque.

Sapranthus microcarpus (Donn. Smith) R. E. Fries. A tree 6 m. high with small brown-red flowers. The species occurs in Salvador, and extends northward to southern Mexico. In the former country it is known by the names "Palanco" and "Chufle."

MONIMIACEAE

Siparuna nicaraguensis Hemsl. A shrub about 3 m. high, with green flowers, growing in wet thickets. The crushed leaves have a strong and characteristic, somewhat aromatic odor.

LAURACEAE

Persea americana Mill. AGUACATE. The Avocado is grown commonly in the vicinity of Siguatepeque, as it is in nearly all parts of Central America.

Phoebe helicterifolia Mez. A slender tree 4.5–7.5 m. high with softly pubescent leaves; flowers greenish white; fruit black, the cup red. Frequent in thickets about Siguatepeque and at El Achote.

Phoebe mexicana Meissn.? A tree 9 m. high, in thicket along stream. Only sterile material was obtainable, and the specific determination is very uncertain.

HAMAMELIDACEAE

Liquidambar Styraciflua L. LIQUIDÁMBAR. A tree 6–15 m. high, with narrow open crown. Common in Pine forest on the upper slopes above Siguatepeque and about El Achote. It is highly remarkable that this well-known tree, the Red Gum or Sweet Gum of the United States, should occur so abundantly in Honduras, although it occurs in the mountains of Mexico and Guatemala. Probably it reaches the southern limit of its range in the Pine-clad mountains of Honduras, but it may well be that it grows also in the unexplored mountains of Northern Nicaragua.

The tree is well known in Honduras by the name "Liquidámbar," and the balsam obtained from the trunk is highly esteemed for various medicinal purposes. During the European War the balsam was gathered in large amounts for export. For an extended account of its use in Honduras and elsewhere in tropical America see Contr. U. S. Nat. Herb. 23: 317 (1922).

As it grows on the hills above Siguatepeque, the Sweet Gum looks much as it does in the United States, although the Honduran trees seem to be somewhat taller and narrower than is usual in the North. The trees are scattered irregularly among the Pines, especially near the banks of streams. When one has once become acquainted with them, they may be recognized at a long distance because of their vivid green tint, much livelier than that of most other trees of the region.

ROSACEAE

Rubus miser Liebm. MORA. A shrub 1-2 m. high, with white flowers; common in open pine forest. Both this and the next species are frequent on the hills about Siguatepeque, and through central Honduras. The fruit is rather sour, but quite as good as the average of the wild Blackberries of the United States. It is gathered commonly and used for the preparation of jelly and preserves.

Rubus trichomallus Cham. & Schlecht. MORA. A shrub of 2 m., with sour purple-black fruit; usually in thickets along streams.

Spiraea cantoniensis var. *lanceata* Zabel. BUQUET DE NOVIA. Planted commonly for ornament. One of the common ornamental shrubs of Central America.

Rosa spp. Roses thrive at Siguatepeque, as they do everywhere in the mountains of Central America. They are grown abundantly also in the lowlands.

Cydonia oblonga Mill. MEMBRILLO. There are several small plantations of Quinces in the region. The fruit is highly esteemed for making marmalade.

Eriobotrya japonica Lindl. NÍSPERO JAPONÉS. The Loquat is planted occasionally for its well-flavored fruit.

Pyrus communis L. PERA. Several small Pear trees are growing in the patio of the hotel at Siguatepeque. I am informed that trees in the vicinity sometimes mature fruit, but that it is small and of inferior quality.

Licania platypus (Hemsl.) Fritsch. SUNZAPOTE. A fine handsome tall tree, planted occasionally. Native at lower altitudes. The large fruits are edible, but of poor quality.

Prunus Persica (L.) Batsch. DURAZNO. Peaches are planted frequently in the mountains of central Honduras, and fruits of good size sometimes are produced.

KRAMERIACEAE

Krameria cuspidata Presl. A densely branched, small shrub 60 cm. high or less, frequent on the plains about Siguatepeque. Apparently, the species has not been reported previously from Central America, but it is frequent in southern Mexico.

LEGUMINOSAE

Inga edulis Mart. GUAMA. A tree 4.5–7.5 m. high with dense rounded crown; frequent in thickets. The long white stamens make the flower heads showy. The white pulp surrounding the seeds is edible.

Mimosa albida H. & B. ZARZA. A shrub 1–1.5 m. high, armed with sharp prickles. Common in open pine forest.

Mimosa pigra L. A shrub 1–2 m. high, often forming dense thickets about boggy places on the plains.

Mimosa hondurana Britton. A large woody vine armed with closely set, recurved prickles which cling to every passing object and tear the skin painfully; pods dark red. The species was based upon material collected in the Lancetilla Valley, at sea level.

Acacia Farnesiana (L.) Willd. ESPINO. A shrub 1–2.5 m. high with whitish spines. Frequent on the dry plains about Siguatepeque.

Acacia Hindsii Benth. BULLHORN ACACIA. A shrub or tree 2–5.5 m. high, armed with large inflated spines. The spines, as in all the bullhorn Acacias, are inhabited by savage ants, which bite most painfully.

Acacia Milleriana Standley, nom. nov. (*Mimosa campechiana* Miller, Gard. Dict. ed. 8. *Mimosa* no. 20 [1768].—*Poponax campechiana* Britton & Rose in N. Amer. Fl. 23: 90 [1928].—Not *Acacia campecheana* Schenck, 1913). ESPINO RUCO. A tree 4.5–9 m. high, armed with long stout spines; crown broad and spreading. Abundant on the dry plains about Siguatepeque. The trees are very distinct in their habit and appearance, and they are recognizable at a long distance.

The genus *Poponax* Raf. is recognized as distinct by Britton and Rose in their recent cactusization of the Mimoseae, but there is no apparent reason why this or probably any of the other segregates should be separated from the long-established unit *Acacia*. In all, eleven segregates from *Acacia* are described in the third part of volume 23 of the North American Flora, and many of them stand upon quite as trivial characters as the cactus segregates proposed by the same authors. The genera *Poponax* and *Fishlockia*, for instance, are separated in the key to genera as follows:

Pinnae few to many pairs; leaflets narrow, small, numerous. *Poponax*.
Pinnae 1 pair; leaflets 1 or 2 pairs, broad, coriaceous. *Fishlockia*.

If these are generic characters, there is no reason why each species of plant should not have its own particular genus.

Acacia salvadorensis (Britt. & Rose) Standley, comb. nov. (*Acaciella salvadorensis* Britton & Rose in N. Amer. Fl. 23: 101 [1928]). A tree 6 m. high, growing in a dry field.

I am transferring this plant to *Acacia*, not because I have any reason to believe that the species is a good one, but merely for convenience. In *Acaciella* Britton and Rose recognize 49 species, mostly forms which a few years ago would have been referred to three or four long-established

species. It is certain that some of the segregates represent valid species, but which really deserve nomenclatural recognition can be determined only after a thorough study of the specimens involved. It is to be feared that this group of the genus *Acacia* is approaching the condition hinted in the last edition of Bailey's *Cyclopedia of Horticulture*: One contributor to that work makes the statement that "the genus consists of 14 specimens," a remark probably truer than he suspected.

Calliandra centralis (Britt. & Rose) Standley, comb. nov. (*Anneslia centralis* Britton & Rose in N. Amer. Fl. 23: 52 [1928]). A shrub 1 m. high or less, the heads showy because of the abundant bright purple-red stamens. The type was collected at San Pedro Sula, Honduras.

Calliandra lucens (Britton) Standley, comb. nov. (*Anneslia lucens* Britton in N. Am. Fl. 23: 194 [1928]). A shrub 1-2 m. high, noteworthy for its very thick and shining, small leaflets; stamens purple-red and showy. Frequent in open pine forest. Type, No. 56397, from Siguatepeque. The species is reported also from Guatemala.

Parkinsonia aculeata L. A handsome yellow-flowered shrub, planted in the garden of the church. I noted it as frequent in the Comayagua Valley, and it is naturalized in many parts of Central America.

Cassia grandis L. CARAO. A fine large tree, its dense masses of blossoms strongly suggesting those of apple blossoms. Probably not native in this region, but a few trees were noted about the town.

Parosela psoraleoides (Moric.) Rose. A shrub a meter high with inconspicuous pinkish flowers. Growing in dry thickets.

Parosela vulneraria (Oerst.) Rydb. A shrub 1-2 m. high, very slender and much branched, frequent in dry thickets and open pine forest. Flowers varying from whitish or cream-colored to red-purple, according to the stage of development and withering.

Diphysa robinioides Benth. A tree 6 m. high, in a thicket along a stream. The *Diphysa* species are esteemed in Central America for their bright yellow wood of good quality.

Benthamantha ochroleuca (Jacq.) Alef. A shrub 1 m. high, the greenish white flowers tinged with red. In dry thickets. The leaflets are more numerous than described for this species by Rydberg (in N. Amer. Fl. 24: 244. 1924), and the form might be regarded as a distinct species, but in this genus of notoriously "weak" species, it does not seem desirable to introduce any additional names.

Desmodium plicatum Cham. & Schlecht. A slender shrub 2 m. high, frequent in pine woods; corolla dark purple.

Erythrina rubrinervia HBK. PITO. A tree 6-9 m. high with few thick branches and soft wood; petals bright red. One of the characteristic small trees of the Pacific slope of Central America, much planted for living fence posts. The young and tender flowers are cooked like string beans, and eaten here as everywhere else in Central America. The tree is a very showy one when in blossom.

Rhynchosia longeracemosa Mart. & Gal. A large vine with greenish yellow flowers; stems usually herbaceous but sometimes somewhat woody. The plant is scarcely to be classed as a shrub.

Piscidia grandifolia (Donn. Smith) I. M. Johnston. A tree 4.5–7.5 m. high, common in thickets about Siguatepeque.

Lonchocarpus atropurpureus Benth. CHAPERNO. A tree 9 m. high; in fruit. In moist thickets.

RUTACEAE

Casimiroa tetrameria Millsp. MATASANO. A tree 6–9 m. high, with dense rounded crown, the leaflets densely soft-pubescent. Growing in thickets along the river. This species bears a sweet watery edible fruit somewhat resembling a green apple.

Citrus sinensis (L.) Osbeck. NARANJA. Oranges of good quality are grown about Siguatepeque. I presume that the other usual citrus fruits of Central America, such as the lime, sour orange, citron, and sweet lime, are planted, but I have no notes regarding their occurrence.

Murraya paniculata (L.) Jack. Planted occasionally for ornament.

SIMAROUBACEAE

Simarouba glauca DC. ACEITUNO, NEGRITO. A large tree with edible black fruits which closely resemble olives. The fruits are of poor flavor and little esteemed. The bark is employed locally as a remedy for affections of the stomach and intestines, especially for dysentery. Oil obtained from the seeds is used in making soap and candles.

MELIACEAE

Trichilia havanensis Jacq. A densely branched tree 9 m. high with glossy leaves and small greenish flowers. Frequent in moist thickets. For the tree I was given the vernacular name "zopilote," but I suspect that this is an erroneous name. In some parts of Honduras it is called "limoncillo," an allusion to its fragrant foliage.

MALPIGHIACEAE

Gaudichaudia Schiedeana Juss. A small inconspicuous woody vine, growing in moist thickets.

Stigmaphyllon ellipticum (HBK.) Juss. A large slender woody vine with sulphur-yellow flowers; in thickets along streams.

Byrsonima crassifolia (L.) DC. NANCE. A large shrub or small tree with showy yellow flowers; frequent in dry thickets. The small fruits, with a flavor somewhat like that of green apples, are eaten chiefly by children.

EUPHORBIACEAE

Croton ciliato-glandulosus Ortega. CIEGA-OJO. A shrub about 1 m. high, frequent in moist thickets. The species occurs also near the coast slightly above sea level. The abundant gland-tipped hairs which fringe

the leaves and stipules adhere readily to the hands, and they are said to cause painful and dangerous inflammation of the eyes if in contact with them. So far as known, this distinctive species does not occur south of Honduras.

Croton flavens L. A stiff shrub 1-3 m. high, frequent along streams. There is some uncertainty regarding the specific determination, but the specimens agree well with material from Yucatan which has been referred here. The species is probably new to the Central American flora.

Croton repens Schlecht. A low shrub, seldom more than 40 cm. high, very common in pine forest and in open fields. Easily recognized among the Central American Crotons because of its small, broad, coarsely toothed leaves.

Acalypha leptopoda Muell. Arg., var. *mollis* Muell. Arg. A shrub or small tree 2.5-5.5 m. high, frequent in dry thickets.

Acalypha macrostachya Jacq. A shrub 3 m. high, in dry thickets. The species occurs also at sea level along the north coast.

***Acalypha porphyrantha*, sp. nov.**

Frutex 0.6-1.2 m. altus, ramulis gracilibus, vetustioribus teretibus cinnamomeis rimosis et sparse pallido-lenticellatis, novellis dense pilis albis longis gracilibus patentibus pilosis, internodiis elongatis; stipulae ferrugineae, minutae, lanceolatae, 1-2 mm. longae, deciduae, minute adpresso-pilosulae; petioli graciles, 0.7-3.5 cm. longi, pilosi; lamina ovata vel late ovata, coriacea, 2.5-8 cm. longa, 1.3-4.5 cm. lata, longe acuminata, acumine angusto longe attenuato acuto vel obtuso, basi cordata vel interdum rotundata, supra viridis vel glauco-viridis, pilis longis albidis patentibus dense pilosa, interdum sublucida, costa nervisque prominulis, subtus viridis, praesertim ad nervos albido-hirsuta, basi 5-7-nervia, costa nervisque gracilibus elevatis, costa superne nervos ca. 5 utrinque emit-tente, nervulis vix prominulis arcte reticulatis, margine grosse serrato, serraturis acutis saepe salientibus. Flores monoici; spicae masculae ex axillis superioribus nascentes, fere sessiles, dense multiflorae, ca. 1.5 cm. longae et 2 mm. crassae; spicae femineae terminales 3-6 cm. longae, breviter pedunculatae, multiflorae, bracteis remotis sessilibus; styli ca. 3 mm. longi, purpureo-rubri, multilacinuligeri.

HONDURAS: in pine forest, Siguatepeque, Dept. Comayagua, alt. 1,100 m., *Paul C. Standley*, no. 56354, February, 1928 (Herb. Field Mus. no. 582,005, type). Also nos. 55841 and 55881 from the same locality.

In all the specimens collected the pistillate inflorescence is so immature that it is impossible to determine the nature of the pistillate bracts, which furnish the most important characters for distinguishing the species. The plant, however, can not be referred to any of the *Acalyphas* known from Central America. In foliage it suggests *A. leptopoda* Muell. Arg., but the inflorescence is altogether different. The species may be recognized by the small size of the plant and by the very thick, more or less lustrous leaves.

Codiaeum variegatum var. *pictum* Muell. Arg. LAUREL, LAUREL TIRABUZÓN, LAUREL FÚNEBRE, LAUREL COLA DE GALLO. The well-known tropical "crotons," with their gaudy variegated leaves, are planted for ornament in almost all Central American gardens. They seem to thrive quite as well in the mountains as in the lowlands.

Euphorbia pulcherrima Willd. PASCUA. The gorgeous poinsettias are one of the glories of Central American gardens. At Siguatepeque they were in full flower in February, but generally they are at their best about Christmas, hence their usual name of "Pascua," or "Christmas-flower."

Jatropha aconitifolia Mill. Planted frequently in hedges. A shrub or small tree.

ANACARDIACEAE

Mangifera indica L. MANGO. Planted abundantly. The favorite fruit of the Central American people.

Mauria sessiliflora, sp. nov.

Arbor 9-12-metralis, ramulis crassiusculis, novellis pilis minutis fulvis adpressis subdense indutis; folia plerumque 22-30 cm. longa, 6-10 cm. longe petiolata, petiolo gracili subtereti glabro; foliola 5-9, jugis 3-4 cm. distantibus, lateralibus 3-8 mm. longe petiolulatis, terminali 1-2 cm. longe petiolulato, anguste oblonga vel lanceolato-oblonga, 10-15 cm. longa, 3-4.5 cm. lata, coriacea, acuminata, acumine attenuato obtuso, basi acuta vel plerumque sensim attenuata, glabra, supra viridia vel glauco-viridia, sublucida, nervis vix prominulis, subtus pallidiora, costa crassiuscula elevata, nervis lateralibus gracilibus, prominentibus, arcuatis, angulo lato adscendentibus, nervulis prominulis arcte reticulatis. Paniculae axillares 10-12 cm. longae, foliis multo breviores, dense pilis brevibus fulvis subadpressis indutae, ramis infimis 1-1.5 cm. longis, superioribus brevioribus, floribus numerosis sessilibus in fasciculis parvis densis subcapitato-congestis, capitulis sessilibus, bracteis minutis triangularibus acutis; sepala rotundata glabra; petala ovalia, obtusa, 2-2.5 mm. longa, glabra, viridescencia; stamina petalis paullo breviora.

HONDURAS: in thicket along river near Siguatepeque, alt. 1,100 m., Paul C. Standley, no. 56062, February, 1928 (Herb. Field Mus. no. 581,919, type). Also no. 56431, from the same locality.

Closely related to *M. birringo* Tul., but in that species the panicles are usually broad and open, the flowers are pedicellate, and the leaflets not long-attenuate at the base.

Rhus terebinthifolia Schlecht. & Cham. A shrub 2 m. high, growing in pine forest near El Achote.

AQUIFOLIACEAE

Ilex panamensis Standl.? A tree 6 m. high, in thickets along streams. It is probable that this tree belongs to an undescribed species. It was possible to obtain only sterile material, and its foliage I can not dis-

tinguish from that of the recently described *I. panamensis*. The latter is a coastal plant, and it does not seem likely that it occurs also in the mountain region.

SAPINDACEAE

Paullinia costaricensis Radlk. A large woody vine, in thickets along streams.

Serjania rhachiptera Radlk. In thickets along streams. A large woody vine with handsome, much dissected leaves. The species occurs also in Guatemala and Salvador.

RHAMNACEAE

Sageretia elegans (HBK.) Brongn. A slender shrub 1.5–2.5 m. high, growing in moist thickets.

VITACEAE

Vitis vinifera L. UVA. European grapes are planted occasionally, but they do not thrive in Central America. The leaf-cutting ants seem to be particularly fond of their foliage.

TILIACEAE

Triumfetta speciosa Seem. A shrub 3 m. high; calyx red, shading above into yellowish. A rather handsome plant, in thickets along the river.

MALVACEAE

Robinsonella divergens Baker & Rose. In a thicket along a stream. A tree 6 m. high. Only one tree was found in this vicinity, and it was pointed out to me by the daughters of Don José Membreño, who had been greatly impressed by its beautiful showing of white flowers a week previously, and had recognized it as something unusual. The specimens differ somewhat from the typical form in having three broad, often obtuse or rounded, nearly entire lobes. All the species of *Robinsonella* are closely related, and this Honduran form does not seem sufficiently distinct from *R. divergens* to deserve nomenclatural recognition. These small trees are well worthy of cultivation because of their showy flowers, although, unfortunately, they persist only a short time upon the tree.

Hibiscus mutabilis L. VARIABLE. A shrub cultivated for ornament because of its large showy flowers, which change color rapidly after opening.

Hibiscus Rosa-Sinensis L. MAR PACÍFICO. The Chinese Hibiscus is one of the favorite garden shrubs.

Hibiscus schizopetalus (Mast.) Hook. VIUDA ALEGRE. Planted occasionally for ornament.

STERCULIACEAE

Waltheria americana L. A shrub 30–60 cm. high, or often only an herb, with yellow flowers. Frequent in pine forest. One of the common weeds of Central America.

THEACEAE

Ternstroemia tepezapote Cham. & Schlecht. A scrubby tree about 6 m. high, with dense branches and thick leathery leaves; frequent in thickets along streams. Only sterile specimens were obtainable.

HYPERICACEAE

Hypericum denticulatum HBK.? Plants stiffly erect, 30–90 cm. high, herbaceous or frequently somewhat woody, with fastigate branches; petals yellow; common in pine forest. The specific determination is very doubtful.

Vismia guianensis (Aubl.) Pers. A shrub 3 m. high, growing in moist thickets.

GUTTIFERAE

Clusia Salvinii Donn. Smith. OREJA DE BURRO ("Donkey's ears"). A shrub or small tree, up to 6 m. high, with very thick, hard leaves and green globose fruit. In wet forest at El Achote.

FLACOURTIACEAE

Casearia sylvestris Sw. A tree of 7.5 m., the small flowers pale green. Common in low thickets.

Xylosma Hemsleyana Standl. A shrub or tree 2.5–6 m. high, in moist thickets. Flowers greenish yellow. The genus is an interesting one because of the fact that the trunks are provided normally with large branched thorns, similar to those appearing on the Honey Locust (*Gleditsia triacanthos*).

LYTHRACEAE

Cuphea Hookeriana Walp. A slender shrub a meter high, or often wholly herbaceous; calyx whitish, the rather showy petals black-purple. Growing about Siguatepeque and as high as El Achote, in open pine forest.

Cuphea utriculosa Koehne. A densely branched shrub about 60 cm. high, growing on rocks at the edges of streams. One of the common species of Central America, and found only along or in streams, with its roots in running water.

Grislea secunda Loeffl. A slender bushy shrub about 2 m. high with gland-dotted leaves and axillary, bright red flowers. This shrub was not noted about Siguatepeque, but it was seen on the north coast near Tela, and it was found to be abundant at one place along the road through the mountains above Tegucigalpa. The genus formerly was known only from northern South America, but it was discovered in Honduras three or four years ago by Professor Samuel J. Record. It is remarkable that it has not been found in the intervening countries, and if it does occur there it can scarcely escape attention, because its brilliant flowers make it conspicuous even when seen from a long distance. Its distribution is erratic, it would seem, even in Honduras.

Certainly it would be difficult to find in Central America two regions more unlike than those in which I have seen it; the low hot swamps of the banana country, and the high dry mountains of Central Honduras, where the climate is rather temperate than tropical.

PUNICACEAE

Punica Granatum L. GRANADA. The Pomegranate is planted rather commonly about Siguatepeque. It is seldom seen in most parts of Central America.

MYRTACEAE

***Calyptranthes hondurensis*, sp. nov.**

Frutex vel arbor 3-6-metralis, ramis gracilibus rigidis teretibus cinereis, novellis angulatis glabris, internodiis brevibus vel elongatis; folia breviter petiolata, petiolo crasso 2-4 mm. longo glabro; lamina oblonga vel elliptico-oblonga, rarius oblongo-lanceolata, 4-6 cm. longa, 1-2 cm. lata, apicem versus angustata, obtusa, basi obtusa vel acutiuscula, subcoriacea, utrinque dense minuteque punctata, supra glauco-viridis, costa subimpressa, nervis obsoletis, subtus pallida, glabra, costa gracili elevata, nervis lateralibus utroque latere circiter 9, prominulis, rectis, angulo acuto adscendentibus, prope marginem nervum distinctum collectivum efformantibus, marginibus saepe revolutis. Paniculae terminales fasciculatae, laxae pauciflorae, ca. 3 cm. longe pedunculatae, ramis oppositis vel verticillatis rigidis glabris, floribus sessilibus vel 1-2 mm. longe pedicellatis, plerumque ternis; calyx in alabastro ellipsoideus, 2-2.5 mm. longus, acutus, sparse et minute adpresso-pilosulus; caetera ignota.

HONDURAS: wet thicket, El Achote, near Siguatepeque, Dept. Comayagua, alt. 1,500 meters, *Paul C. Standley*, no. 56164, February 18, 1928, (Herb. Field Mus. no. 581,097, type); Siguatepeque, alt. 1,100 m., *P. C. Standley*, no. 55933.

A relative of *C. pendula* Berg, of southern Mexico, but in that the flowers are sessile and the petioles are longer.

Vernacular name, "Guayabillo."

Eucalyptus spp. Two species of this genus have been planted about Siguatepeque, but specimens of them were not collected. The trees are favorites in some parts of Central America because of their rapid growth.

***Eugenia Doubledayi*, sp. nov.**

Frutex vel arbor 3-6-metralis, ramulis subgracilibus teretibus brunneis plus minusve rimosis minute sericeis vel fere omnino glabris, internodiis elongatis; petioli 10-15 mm. longi, fere glabri, crassiusculi, anguste sulcati; lamina elliptica, 6.5-12 cm. longa, 3.5-5.5 cm. lata, abrupte acuminata, acumine anguste triangulari obtuso, basi acuta, coriacea, opaca sed dense glanduloso-punctata, supra viridis, costa impressa, nervis obscuris, subtus pallida, statu juvenili sericea, cito glabrata, costa valida elevata, nervis lateralibus utroque latere circiter 12 promi-

nulis gracillimis angulo acuto adscendentibus fere rectis prope marginem irregulariter conjunctis, nervulis obsoletis. Inflorescentiae axillares, breviter racemosae, 5–8 mm. longe pedunculatae, plerumque triflorae, pedicellis 5–6 mm. longis minute puberulis; calycis lobi in apice baccae persistentes, rotundati, obtusi, 2.5–3 mm. longi, punctati, extus minute sericei; fructus oblongus vel obovoideo-oblongus, circiter 18 mm. longus et 6–7 mm. latus, 8-costatus, glaucescens et minute albido-sericeus vel glabratus, basin versus paullo angustatus, apice obtusus; semen 1, cylindricum, 12 mm. longum, 4 mm. diam., brunnescens, nigro-puncticulatum.

HONDURAS: in thicket along river, Siguatepeque, Dept. Comayagua, alt. 1,100 meters, *Paul C. Standley*, no. 56063, February, 1928 (Herb. Field Mus. no. 581,920, type), also no. 56190.

The species is not closely related to any other known from Central America. The leaves resemble those of *E. guatemalensis* Donn. Smith, but in that the fruit is much smaller and oval.

Eugenia Doubledayi is named for Louis Doubleday, who accompanied me on a visit to the interior of Honduras, and to whom I am indebted for a great deal of assistance in making the collections about Siguatepeque.

Eugenia axillaris (Sw.) Willd. A tree 4.5–7.5 m. high, common in thickets along streams.

Eugenia guatemalensis Donn. Smith. A shrub 1.5–3 m. high, in moist thickets. The species grows also along the north coast of Honduras at sea level.

Eugenia Jambos L. MANZANA. A large tree with exceptionally handsome foliage and with rather inconspicuous, greenish flowers. The edible fruit has the flavor of rose water, hence the common name of "rose-apple." The tree is planted generally in Central America for its shade and fruit, and about Siguatepeque it is naturalized everywhere, even well up in the mountains along the streams.

Psidium molle Bertol. GUAYABILLA, HUEVO DE GATO. Common, growing nearly everywhere, on plains, in open pine forest, and in moist thickets along streams. In drier places, where the soil is sterile, the plants are usually only 60–90 cm. high, but in moist places they attain the size of a small tree, about 5 m. high. The fruit is highly esteemed in the interior of Honduras, and it is certainly far superior in flavor to the common guava, being juicy and sweet, but somewhat acidulous. The species is widely distributed in Central America, at least on the Pacific slope.

Psidium Oerstedianum Berg. ARRAYANA. A low shrub, only 30–60 cm. high, in open pine forest; common. The fruits of this species, also, are considered very good to eat.

MELASTOMACEAE

Clidemia hirta (L.) Don. SIRÍN. A bushy shrub 1 m. high; petals pinkish white. Frequent in open pine forest.

Conostegia xalapensis (Bonpl.) Don. SIRÍN. A frequent shrub 1.5–3 m. high, in pine forest. The most common member of the family in Central America. The species grows also at sea level on the north coast.

Heterotrichum octonum (H. & B.) DC. A shrub 2 m. high, in thickets along streams; petals white.

Miconia albicans Triana. SIRÍN, NEGRITO. A shrub 0.5–2 m. high, very common in open dry pine forest.

Miconia globulifera Naud. SIRÍN. A conspicuous shrub 1.5–2.5 m. high, common in moist thickets and in open pine forest.

Miconia guatemalensis Cogn. SIRINA. A shrub 1–1.5 m. high, in thickets about Siguatepeque and also in bogs at El Achote. Petals white, the fruit red-purple.

Miconia mexicana (H. & B.) Naud. SIRINA. A shrub 2 m. high with handsome white flowers; growing in pine forest about El Achote.

ARALIACEAE

Oreopanax Salvinii Hemsl. MANO DE LEÓN. A tree about 4.5 m. high with large, long-petioled, deeply lobed, coarsely stellate-pubescent leaves. I was told that the tough leaves are used for wrapping soap.

CORNACEAE

Cornus excelsa HBK. A shrub or tree 2.5–5.5 m. high, frequent along streams about Siguatepeque, and collected also in wet thickets at El Achote.

CLETHRACEAE

Clethra hondurensis Britton. A tree 4.5–7.5 m. high, growing in thickets along streams. Found in fruit only.

ERICACEAE

Andromeda mexicana Hemsl. A tree 4.5–7.5 m. high, with rough gray bark. Growing in pine forest; usually very irregular in growth, and often much gnarled, especially in its favorite habitat, exposed rocky hilltops. The species has been collected recently in northern Salvador.

Arbutus xalapensis HBK. INDIO DESNUDO (“naked Indian”). A tree 4.5–6 m. high, in wet thickets high in the mountains. The thin bark peels off in papery sheets, leaving the smooth brown trunk, hence the vernacular name, which is given on the coast to *Bursera Simaruba*, in which the trunk has much the same appearance. The flowers are white and rather handsome.

MYRSINACEAE

Ardisia compressa HBK. CAMACA. A shrub 1.5–2.5 m. high with white flowers. Frequent in moist thickets. The purple-black fruit is edible and of good flavor, but the flesh is very scant. This is one of the common shrubs of the Central American mountains.

Rapanea ferruginea (R. & P.) Mez. A tree 4.5–6 m. high, in pine forest at El Achote.

SAPOTACEAE

Calophyllum mammosum (L.) Pierre. ZAPOTE. A tree about 12 m. high with spreading open crown. Cultivated commonly for its sweet fruit, and also naturalized in thickets along the river. I found the tree wild in primeval forest along the north coast of Honduras.

Chrysophyllum mexicanum Brandeg. CAIMITO. A tree 6 m. high, in thickets along the river. Similar in appearance to the common Star-apple (*C. Cainito*), but with much smaller fruits.

LOGANIACEAE

Buddleia americana L. A shrub 1–2.5 m. high, with small yellow flowers. Frequent in moist thickets. One of the common weedy shrubs of Central America.

APOCYNACEAE

Echites microcalyx A. DC. Common in moist thickets or in pine forest. A small, very slender, herbaceous or somewhat woody vine with handsome, bright yellow blossoms, the corolla having a brown or dark red throat.

Tabernaemontana divaricata (L.) R. Br. MAGNOLIA. A shrub with fragrant white flowers, planted for ornament. It would be interesting to know how the name "Magnolia" happens to be thus misapplied, but, if I remember correctly, it is given to the plant also in Nicaragua. It would be equally interesting to learn how the name "Sassafras," of North American Indian origin, happens to be applied in Central America to species of the genus *Croton*.

Thevetia peruviana (Pers.) K. Schum. CHILCA. A shrub or small tree with large, bright yellow flowers, sometimes planted for ornament.

VERBENACEAE

Lantana involucrata L. PETATILLO. A shrub a meter high, with pink flowers; growing on dry plains.

Lippia Kellermanii Greenm. CUTUFUME. A tree 4.5–6 m. high; corollas pale yellow. In wet thickets high in the mountains.

Lippia myriocephala Schlecht & Cham. A tree about 12 m. high, with a trunk 25 cm. in diameter. Occasional in dry thickets. In Salvador boards are sometimes sawed from the trees.

LABIATAE

Hyptis asperifolia, sp. nov.

Frutex 1-1.5-metralis, ramis gracilibus obtuse quadrangularibus, vetustioribus brunneis vel ochraceis, novellis ferrugineis scabris, internodiis brevibus; folia opposita, fere coriacea, petiolata, petiolo crassiusculo 2-14 mm. longo dense et brevissime villosulo vel scaberulo; lamina oblonga vel oblongo-ovata, pleraque 1-3 cm. longa et 0.8-2 cm. lata, interdum usque ad 8 cm. longa et 4 cm. lata, grosse crenata, apice obtusa vel fere rotundata, basi acuta vel acuminata, supra viridis, scabra, costa manifesta, nervis obsoletis, subtus pallidior, sparse vel dense ochraceo- vel griseo-tomentosa, tomento e pilis stellatis composito, costa gracili elevata, nervis lateralibus utroque latere circiter 6 prominentibus angulo acuto adscendentibus. Flores capitati, capitulis axillaribus dense multifloris plerisque 2-5 mm. longe pedunculatis vix 1 cm. diam., bracteis filiformibus calyce brevioribus; calyx 5-6 mm. longus, scaberulo-hispidulus, laciniis lineari-attenuatis tubo campanulato paullo brevioribus erectis; corolla pallide purpurea, circiter 1 cm. longa, extus sparse puberula, tubo gracili cylindrico, lobis 1.5-2 mm. longis; antherae breviter exsertae.

HONDURAS: in pine forest near Siguatepeque, Dept. Comayagua, alt. 1,200 m., *Paul C. Standley*, no. 56231, February 1928 (Herb. Field Mus. no. 581,425, type); in pine forest, El Achote, near Siguatepeque, 1,500 m., *P. C. Standley*, nos. 56095, 56180.

An isolated species, characterized by its shrubby habit, small thick leaves, stellate pubescence, and small short-peduncled axillary flower heads.

Salvia siguatepequensis, sp. nov.

Frutex 1-1.5-metralis ramosus, ramis crassis obtuse quadrangularibus vel subteretibus densissime brunneo-tomentosis, internodiis elongatis; folia opposita, petiolata, in sicco fere subcoriacea, oblonga vel ovato-oblonga, 9-17 cm. longa, 3-8 cm. lata, acuta vel acuminata, basi obtusa vel acuta, arcte dentibus obtusis serrato-dentata, supra viridis, tenuiter minuteque stellato-tomentella, subtus dense stellato-tomentosa, tomento cinereo vel pallide brunnescente, costa valida elevata, nervis lateralibus utroque latere circiter 8 prominentibus angulo acuto adscendentibus. Flores verticillati, verticillis paucifloris remotis vel approximatis, racemum laxum 4-10 cm. longum efformantibus, pedicellis 2-9 mm. longis ut rhachis pilis interdum viscidis simplicibus vel stellatis hispidulis; bractae caducae, oblongo-ovatae, circiter 18 mm. longae, apice longe filiformi-subulatae, dense stellato-tomentosae; calyx 1-1.5 cm. longus, anguste campanulatus, prominenter costatus, viridis, sparse glanduloso-pilosulus et ad nervos pilis brevibus basi dilatatis indutus, labiis subaequalibus anguste triangularibus longe filiformi-acuminatis, calyce in statu fructifero interdum recurvo; corolla coccinea, extus sparse villosa-pilosa, 2.5-2.8 cm. longa, tubo 5 mm. longo et 2 mm. lato, abrupte ampliato,

fauce 1.5 cm. longa et 8 mm. lata, labio superiore erecto circiter 8 mm. longo, inferiore brevior intus glabro; stamina inclusa; stylus supra breviter pilosus.

HONDURAS: moist thicket near Siguatepeque, Dept. Comayagua, alt. 1,100 m., *Paul C. Standley*, no. 55917, February, 1928 (Herb. Field Mus. No. 581,177, type); thicket along stream, *P. C. Standley*, no. 56346; pine forest, *P. C. Standley*, no. 55899.

In this plant the corolla and pubescence are much like those of *S. Lindenii* Benth., but in the latter the leaves are cordate or subcordate at the base.

SOLANACEAE

Cestrum lanatum Mart. & Gal. An ill-scented shrub 1.5–3 m. high, with pale green flowers. Frequent in moist thickets.

Solanum diversifolium Schlecht. A prickly shrub 2 m. high with white flowers. Frequent in moist thickets. Probably the most common *Solanum* of Central America.

Solanum erythrotrichum Fernald. A shrub of 2.5 m. with white flowers, growing in moist thickets. The species ranges rather widely, from Guatemala to Panama. In the Canal Zone it grows in wet thickets at sea level, under very different conditions from those prevailing about Siguatepeque.

Solanum laurifolium Mill. A prickly shrub 1.5 m. high, with unusually large and very showy, violet flowers; in moist thickets.

GESNERIACEAE

Kohleria Deppeana (Schl. & Cham.) Fritsch. A handsome shrub 1.5–2.5 m. high, with bright red, tubular flowers; in wet thickets at El Achote.

The shrubby plants of this family, which constitute perhaps the most brilliantly flowered group of Central American plants, are very rare in the parts of Honduras which I visited. They reach their best development in the mountains of Costa Rica, where the gorgeous *Columnas* often present vivid masses of color.

ACANTHACEAE

Aphelandra Deppeana Schlecht. & Cham. A shrub 1–2.5 m. high, bearing dense spikes of bright red flowers. Common in thickets along the river.

RUBIACEAE

Cephalanthus salicifolius H. & B. A shrub or small tree, 1–6 m. high, in habit much like the Buttonbush (*C. occidentalis*) of the United States. Abundant along small streams running through the pine forest.

Rondeletia amoena (Planch.) Hemsl. A shrub or small tree with handsome pink flowers, growing in wet thickets at El Achote.

Rondeletia buddleioides Benth. A tree 4.5–7.5 m. high, in thickets along streams.

Bouvardia leiantha Benth. A very slender shrub, a meter high or less, with graceful and brilliant, scarlet flowers. Growing under pine trees.

Gardenia jasminoides Ellis. JAZMÍN DEL CABO. A shrub with fragrant white flowers. Frequently grown for ornament.

Anisomeris protracta (Bartl.) Standl. A shrub or tree 2–6 m. high, in thickets along streams.

Guettarda macrosperma Donn. Smith. A slender shrub or tree 4.5–6 m. high, in thickets along streams.

Coffea arabica L. CAFÉ. Coffee is planted on a small scale about Siguatepeque, but is not grown for export. Substantial amounts of coffee are grown in some parts of Honduras, but in this crop the country is far behind the other Central American states.

***Psychotria fruticetorum*, sp. nov.**

Frutex circiter 1 m. altus, ramulis subteretibus glabris, vetustioribus ferrugineo-brunneis rimosus, novellis viridibus; stipulae ovatae vel lanceolatae, 3.5–4 mm. longae, longe subulato-acuminatae, brunnescentes, caducae, minute scaberulae; folia opposita, glabra, petiolo gracili 3–5 mm. longo supra sulcato; lamina subcoriacea, obovato-oblonga vel oblongo-oblancheolata, 5–6.5 cm. longa, 1.7–2.5 cm. lata, acuta vel obtusa, basin versus longe sensimque cuneato-attenuata, supra glauco-viridis, costa non elevata, venis obscuris vel obsoletis, subtus paullo pallidior, costa prominente gracili, nervis lateralibus utroque latere 7–8 prominulis gracilibus angulo acuto adscendentibus subarcuatis prope marginem obscure conjunctis, margine paullo incrassato et revoluta, nervulis obsoletis. Inflorescentiae terminales cymoso-corymbosae vel umbelliformes, 5–14 mm. longe pedunculatae, pedunculo gracili glabro, pauciflorae, floribus subsessilibus, bracteis minutis; calyx 0.5 mm. longus, 5-lobus, lobis late ovatis obtusis. Fructus ruber, subglobosus, 3–3.5 mm. longus, pyrenis dorso obtuse costatis facie ventrali planis.

HONDURAS: thicket along stream, Siguatepeque, Dept. Comayagua, alt. 1,100 meters, *Paul C. Standley*, no. 56197, February, 1928 (Herb. Field Mus. no. 581,450, type).

Although this plant is not marked by any outstanding characters, it does not agree with any species of *Psychotria* hitherto known from Central America. It grows in thickets along the small streams in the pine-covered hills about Siguatepeque.

Triodon angulatum Benth. A low dense shrub, only 30–60 cm. high; flowers white. Common in the edges of streams.

***Borreria fruticosa*, sp. nov.**

Frutex erectus 30–90 cm. altus, dense ramosus, ramis validis tetragonis ferrugineis glabris, internodiis brevibus vel elongatis; stipulae in vaginam 1.5 mm. longam scaberulam vel glabratam connatae, apice in aristas paucas 3.5–5 mm. longas erectas glabras desinentes; folia opposita, saepe in axillis fasciculis foliorum reductorum onusta, lanceolata vel

oblongo-lanceolata, acuta vel acuminata, apice subulato-mucronata, basin versus angustata vel saepe in petiolum brevissimum abrupte contracta, coriacea, glabra, supra luteo-viridia, costa subimpressa, nervis obsoletis, subtus pallida, costa prominula, nervis lateralibus paucis obscuris angulo angustissimo adscendentibus, margine revoluta. Flores subsessiles ad apices ramulorum subcapitati, capitulis paucifloris; hypanthium 2 mm. longum, turbinatum, glabrum; calyx 4-partitus, laciniis 2.5–3 mm. longis lineari-lanceolatis subulato-attenuatis viridibus basi obscure ciliolatis, denticulis minutis alternantibus; corolla viridescenti-alba, 2 mm. longa, extus glabra, fauce pilosula, fere ad basin 4-fida, lobis oblongis obtusis; stamina prope basin tubi inserta, filamentis brevissimis, antheris late oblongis; stylus gracilis, ramis 2 brevibus obtusis. Fructus cylindricus 4.5 mm. longus, 2 mm. crassus, glaber, laciniis calycis persistentibus coronatus, coccis apice tantum longitudinaliter dehiscentibus; semina oblonga, fusca, 2 mm. longa, placentae oblongae 3.5–4 mm. longae pallidae adnata.

HONDURAS: in pine forest, Siguatepeque, Dept. Comayagua, alt. 1,100 m., *Paul C. Standley*, no. 56240, February, 1928 (Herb. Field Mus. no. 581,434, type), no. 56019.

This plant represents a curious and interesting species. By its habit alone it is readily distinguished from all the other species of *Borreria* known from Central America, for it is a true shrub, stiffly erect, with well-developed woody stems. The seed characters are almost distinct enough to furnish generic characters for separating the plant from *Borreria*. They are almost exactly like those of the genus *Emmeorrhiza*, but the style is that of *Borreria*, and the habit is quite unlike that of the former genus, which consists of scandent suffrutescent plants with flowers in umbels. It seems preferable to place the Honduran plant for the present in *Borreria*, since I suspect that similar seeds may be found in some of the numerous species of that genus.

CAPRIFOLIACEAE

Sambucus mexicana Presl. SAUCO. A shrub or small tree, planted frequently about houses, probably because of the fact that it is often used in domestic medicine.

COMPOSITAE

Vernonia canescens HBK. A shrub 1 m. high with pinkish white flowers. Growing in pine forest.

Vernonia Deppeana Less. A shrub or tree of 2–5.5 m., bearing pinkish flowers. In thickets along streams.

Vernonia melanocarpa (Gleason) Blake. HOJA BLANCA. A bushy shrub 1.5–2.5 m. high with white flowers. Common in open pine forest.

Vernonia tortuosa (L.) Blake. A shrub 1.5–3 m. high, the flowers pinkish white, with a strong vanilla odor. In thickets along the river.

Ageratum (§ *Coelestina*) **Standleyi** Robinson, spec. nov., fruticosum erectum subgriseo-viride rigidiusculum usque ad 9 dm. altum scabrido-puberulum; caule subtereti supra per abortionem axis principis saepe pseudo-dichotomo; ramis adscendentibus; foliis oppositis breviter petiolatis ovatis obtusis integerrimis margine revolutis textura rigidis supra scabridis puberulis et glandulari-granulosis subtus griseo-pannosis a puncto paullo supra basin 3-nervatis 1-2.2 cm. longis 7-13 mm. latis basi obtusis vel subtruncatis; petiolo 1-3 mm. longo; corymbis terminalibus modice convexis vel hemisphaericis ca. 3 cm. diametro; pedicellis 0-1 cm. longis; involucri campanulati ca. 4 mm. alti ca. 5 mm. diametro squamis subbiseriatim imbricatis angustissime lanceolatis attenuatis apice incurvis 2(-3)-costatis dorso puberulis et cum glandulis sessilibus globosis ornatis; receptaculo leviter conico nudo; corollis lavandulaceis ca. 3 mm. longis extus sparse granulatis; dentibus limbi brevibus vix 0.3 mm. longis deltoideis; styli ramis filiformibus elongatis; achaeniis nigris glabris lucidulis 2.2 mm. longis in summo cum cupula vix 0.2-0.3 mm. alta primo ut videtur infra sed maturitate distincte extra corollam coronatis.

HONDURAS: pine forest, vicinity of Siguatepeque, Dept. Comayagua, alt. 1080-1400 m., Feb. 14-27, 1928, *Paul C. Standley*, no. 56,234 (TYPE in Field Mus.)

The reduction of the pappus to a mere ring or low crown, which at least in its early stages appears morphologically beneath rather than exterior to the corolla, makes this species a somewhat doubtful intermediate between *Ageratum* § *Coelestina* and *Alomia*. In full maturity, however, this shallow and slightly undulate or toothed rim or crown of the achene is pretty clearly external to the base of the insertion of the corolla and may therefore be considered a rudimentary pappus rather than a mere specialized thickening of the receptacle at the articulation of the corolla and summit of the achene.

The small thick rigid entire leaves with dense pale gray indument on the lower surface should make the species easy to recognize among its congeners.—B. L. ROBINSON.

A shrub a meter high, with lavender flowers. Growing in open pine forest.

Eupatorium collinum DC. A shrub of 1-2 m., the flowers white. In pine forest. One of the common species of Central America.

Eupatorium daleoides (DC.) Hemsl. A slender tree of 4.5-7.5 m., growing in thickets along streams.

Eupatorium (§ *Subimbricata*) **hondurense** Robinson, spec. nov., fruticosum erectum 1.2 m. altum; caule subtereti brunnescente puberulo virgato vel sursum paucirameo usque ad 3-4 mm. diametro; foliis oppositis breviter petiolatis ovatis vel ovato-oblongis apice subacutis vel saepius obtusis leviter crenato-serratis basi rotundatis vel subcuneatim angustatis utrinque exserto-reticulatis puncticulatis pinnatim

paullo supra basin 3-5-nervatis 4-6.6 cm. longis 2-4 cm. latis textura coriaceis in costa nervisque tomentello-puberulis; petiolo tereti tomentello-puberulo ca. 5 mm. longo; inflorescentia breviter laxaque thyrsoida 4-9 cm. alta 3-9 cm. diametro apice rotundata; pedicellis 0.5-1.5 mm. longis; capitulis 12-13-floris ca. 6 mm. altis pedicellatis; involucri anguste campanulati squamis ca. 14 subtriserratis imbricatis, exterioribus lanceolatis acutis ca. 3 mm. longis et 1 mm. latis, interioribus oblongis vel anguste obovato-oblongis ad summum versus subdentatis cuspidatis, dorso glandulari-granulatis viridibus; corollis ca. 2-6 mm. longis sursum gradatim ampliatis, dentibus limbi perbrevibus; achaeniis 1.9-2.2 mm. longis sursum brevissime scabratis; pappi setis ca. 20 sublaevibus; styli ramis clavatis nigrescentibus saepe deflexis.

HONDURAS: brushy bank, vicinity of Siguatepeque, Dept. Comayagua, alt. 1080-1400 m., Feb. 14-27, 1928, *Paul C. Standley*, nos. 56,357 (TYPE, in Field Mus.; ISOTYPE in Gray Herb.) and 56,390 (Field Mus.).

This plant, with inflorescence and involucre slightly resembling those of *E. collinum* DC., differs much in its few-flowered heads, short petioles and firm reticulated leaves. Among the Central American Eupatoriums it may be placed near *E. costaricense* Ktze. from which, however, it may at once be distinguished by its shorter, thicker and much more shortly pedicelled heads, denser inflorescence, and more broadly ovate leaves as well as its relatively broader phyllaries.—B. L. ROBINSON.

A shrub a meter high, growing in pine woods and on open brushy banks.

Eupatorium laevigatum Lam. A shrub 2 m. high, in pine forest.

Eupatorium micranthum Less. A tree 4.5 m. high, in pine forest near El Achote.

Eupatorium Oerstedianum Benth. A shrub of 2.5 m., in moist thickets.

Brickellia oliganthes (Less.) Gray. A slender shrub a meter high, in open pine woods.

Brickellia pacayensis Coult. A shrub 1.5-2 m. high with pale yellow flower heads. In dry or moist thickets.

Brickellia paniculata (Mill.) Robinson. A shrub 1-1.5 m. high, characteristic of dry thickets.

Pluchea odorata (L.) Cass. SUACUAMÁN. An unattractive shrub 3-4.5 m. high, with pink flowers. In moist thickets. One of the common and more or less weedy shrubs of Central America, especially on the Pacific slope.

Archibaccharis Standleyi Blake in Jour. Washington Acad. Sci. 19: 271 (1929). On open rocky banks, no. 56193. A shrub a meter high, with white flowers.

Baccharis serraefolia DC. An erect shrub a meter high with greenish white heads. In pine forest.

Baccharis splendens Heering. A shrub 1.5 m. high, in pine forest.

Baccharis trinervis var. *rhexioides* (HBK.) Baker. A shrub 1-2.5 m. high, with recurved branches, the flower heads greenish white. Growing

in open pine forest. One of the widely distributed weedy shrubs of Central America.

Nocca helianthifolia var. *suaveolens* (HBK.) Robinson. Plants simple or sparingly branched, suffrutescent or herbaceous, about a meter high; flowers creamy white. Occasional in pine forest.

Calea integrifolia (DC.) Hemsl. A slender shrub a meter high; rays white, the disk yellow. Frequent in open pine woods.

Calea Tejadae Blake. A shrub a meter high, with dirty white heads. Abundant in open pine woods and on dry plains, forming extensive thickets.

Calea urticifolia (Mill.) DC. A shrub of 1-3 m., with yellow heads. Growing in wet thickets, on brushy banks, and in pine forest.

Perymenium Purpusii Brandeg. A low shrub, about a meter high, with yellow-green flower heads. Frequent in pine forest.

Perymenium strigillosum (Rob. & Greenm.) Greenm. A tree about 7.5 m. high, with pale shredded bark; flower heads greenish yellow. Frequent in thickets. This is one of the few Central American Compositae which become true trees. In Salvador its wood is highly esteemed for construction purposes.

Tithonia Pittieri (Greenm.) Blake. Suffrutescent, about a meter high; heads yellow. Growing in pine forest. A narrow-leaved form of this species, according to Blake, who refers here also another specimen, taken from a tall herb. The two plants are so unlike in appearance when growing, as well as in the herbarium, that it scarcely seems possible that they represent the same species.

Verbesina sublobata Benth. A shrub of 3 m. with large pinnatifid leaves and few branches. Occasional in dry thickets.

Zexmenia frutescens var. *villosa* (Polak.) Blake. A shrub of 2 m., the heads yellow. In open pine forest.

Zexmenia melastomacea Blake in Jour. Washington Acad. Sci. 19: 274 (1929). In pine forest, nos. 56389 and 55826. Suffrutescent or herbaceous, the heads yellow.

Senecio arborescens Steetz. A shrub or tree of 2-6 m., with few thick branches; leaves pinnately lobed. Sometimes forming small groves along streams.

Senecio cobanensis Coulter. A glabrous shrub or small tree 2-4.5 m. high, with yellow flower heads. Growing in thickets along streams.

Trixis Deamii Robinson. FLOR DE CAMPO. A shrub of 1-2 m., bearing numerous small yellow heads. Frequent in open pine woods.

FIELD MUSEUM OF NATURAL HISTORY
CHICAGO.

THREE NEW PLANTS FROM YUCATAN

PAUL C. STANDLEY

DURING the summer of 1929, Dr. J. Bequaert, whose botanical explorations in western tropical Africa yielded such rich returns, collected about 100 numbers of plants in northern Yucatan. The whole collection including the duplicates was kindly presented to the Arnold Arboretum by the collector and a set of his well-prepared specimens was sent to the writer for determination. Although made in a region presumably explored thoroughly by earlier visitors, the collection was found to contain three plants not represented in available herbarium material from Yucatan. It is rather amusing to find that all three of these apparently new species were discovered at Chichen Itzá, the goal of most visitors to Yucatan.

Besides the new species, the Bequaert series contains specimens of many endemic and rare Yucatan plants, some of which, such as *Croton malvaviscifolius* Millsp., have been known heretofore only from the type collection.

Nemastylis Bequaertii, sp. nov.

Herba 30–35 cm. alta, scapis supra medium ramosis subteretibus glabris viridibus spathas 4–6 gerentibus; folia radicalia late linearia, circiter 28 cm. longa et 13 mm. lata, longe sensimque attenuata, glabra 5-nervia, foliis caulinis brevioribus et 6–8 mm. latis; spathae circiter 6-florae, longe pedunculatae, pedunculo 4–8 cm. longo gracillimo glabro erecto vel adscendente; spathae bracteae valde inaequales, interiore duplo brevioris vel interdum exteriorem fere aequante, 2–3 cm. longae, longe et angustissime attenuatae, glabrae, multinerviae, erectae; flores longe pedicellati, pedicellis gracillimis usque ad 2.5 cm. longis glabris, inclusis vel breviter exsertis; ovarium oblongum, glabrum, 5 mm. longum, 2 mm. latum; perianthium ut videtur caeruleum circiter 9 mm. longum, segmentis late cuneato-obovatis apice late rotundatis; antherae lineares, 4 mm. longae rectae, connectivo gracili.

YUCATAN: in clearing of woods, Chichen Itzá, *J. Bequaert*, no. 109, June 30, 1929 (Herb. Field Mus. no. 603,516, type; isotype in Gray Herb.).

BRITISH HONDURAS: Honey Camp, *C. L. Lundell*, no. 577, October, 1929.

Erythroxyton Bequaertii, sp. nov.

Frutex vel arbuscula 3.5–4.5 m. alta, ramulis gracilibus subteretibus pallidis vel ferrugineis interdum substriatis glabris lenticellis albidis elevatis conspersis, internodiis brevissimis; stipulae parvae, persistentes, anguste triangulares, attenuatae, integrae, erectae, glabrae; folia petiolata, membranacea, petiolo gracili subtereti glabro circiter 5–6 mm. longo; lamina elliptico-oblonga, prope medium latissima, 2.8–5 cm. longa, 1–2.2 cm. lata, versus apicem obtusum vel anguste rotundatum angustata, apice breviter mucronata, versus basin sensim longeque angustata et ad petiolum longe decurrens, glabra, non areolata, supra

viridis, venis prominulis, subtus pallidior, costa gracili elevata, venis nervulisque prominulis et arcte reticulatis; flores ad axillas paucifasciculati, pedicellis glabris 4–5 mm. longis validiusculis angulatis; calyx circiter 1.7 mm. longus, 5-fidus, lobis ovatis acutis vel acuminatis crassiusculis; petala oblonga, 3–3.5 mm. longa, glabra, apice obtusa; tubus staminalis calyce paullo longior, filamentis elongatis tubo longioribus, antheris circiter 0.6 mm. longis.

YUCATAN: Chichen Itzá, *J. Bequaert*, no. 102, June 28, 1929 (Herb. Field Mus. no. 603,414, type; isotype in Herb. Arnold Arb.).

The species of *Erythroxylon* are, for the most part, poorly marked, and based upon characters of doubtful value. The present plant, although possessing no outstanding characters, does not agree with any of the species reported from Mexico or the West Indies.

***Stenandrium subcordatum*, sp. nov.**

Herba scaposa perennis, 5.5–11 cm. alta e rhizomate brevi crasso nodoso; folia basalia longe petiolata, petiolo 1.5–2.5 cm. longo dense griseo-piloso; lamina membranacea, oblongo-ovata vel ovali-ovata, 3–4 cm. longa, 1.5–2.5 cm. lata, apice rotundata vel obtusissima, basi inaequali subcordata, utrinque pilis brevibus patentibus albidis densiuscule pilosula, ad nervos longius pilosula; scapus gracilis erectus dense pilis brevibus patentibus albidis pilosus, spica 2–3 cm. longa, dense multiflora, bracteis adpressis anguste linearibus 5–7 mm. longis attenuatis dense puberulis, bracteolis conformibus vel paullo angustioribus brevioribusque; sepala 5 lineari-subulata, 3.5–4.5 mm. longa, subulato-attenuata, nervulosa, scaberula, erecta; corolla purpurascens, glabra, tubo gracili 7–8 mm. longo circiter 0.8 mm. crasso, limbi lobis subaequalibus late obovatis 6–7 mm. longis apice rotundatis; antherae inclusae.

YUCATAN: in bush, Chichen Itzá, *J. Bequaert*, no. 20, June 3, 1929, (Gray Herb., type).

The plant is similar to *S. dulce* (Cav.) Nees, but in that the leaves are narrowed and decurrent at the base, and the bracts are broad and obtuse.

Blake, following Pennell, has used for this genus of the Acanthaceae the name *Gerardia*. In following the International Rules, I do not see that such a course is necessary, and it is surely preferable to retain the name *Gerardia* for the well-known genus of the Scrophulariaceae to which it has been applied by most botanists.

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NOTULAE SYSTEMATICAE AD FLORAM SINENSEM

H. H. HU

***Schizophragma macrosepalum*, sp. nov.**

Frutex scandens. Folia papyracea, oblongo-elliptica, circiter 17 cm. longa et 5 cm. lata, acuminata, basi subrotundata vel late cuneata,

integra, glabra, supra obscure luteo-viridia, subtus pallidiora et lucida, venis pubescentibus exceptis glabra; petioli 1.5 cm. longi, puberuli. Cymae tomentellae; calycis tubus sparse pilosulus; sepalum floris sterilis late ovatum, 7–11.5 cm. longum et 5–6 cm. latum, acuminatum, basi oblique subrotundatum, venis puberulis exceptis glabrum. Capsula subglobosa, 7 mm. longa et 6 mm. diam.

Climbing shrub. Leaves papery, oblong-elliptic, acuminate, 17 cm. long, 5 cm. broad, nearly rounded to broad-cuneate at base, entire along the margins, glabrous, obscurely yellowish-green above, shining and paler green beneath, glabrous except pubescent along the veins; petiole 1.5 cm. long, puberulous. Cymes tomentulous, calyx-tube sparsely pilosulous; sepal of sterile flower broad-ovate, 7–11.5 cm. long, 5–6 cm. broad, unequally roundish at base, acuminate at apex, glabrous except puberulous along the veins. Capsule subglobose, 7 mm. long and 6 mm. broad.

KWANGSI: Shih wan dar shan, south of Nanning, in woods, 350 m., *R. C. Ching*, no. 7871, Oct. 15, 1928 (type).

A striking species differing from all known species in the exceedingly large sterile flowers. Its entire leaf without the slightest dentation is like *S. hypoglaucum* Rehd., but the sterile flowers readily differentiate this species from the others.

***Sloanea Chingiana*, sp. nov.**

Arbor ad 14 m. alta; truncus 30 cm. diam., cortice cinereo laevi obtectus; ramuli glabri, sparse lenticellati. Folia oblongo-lanceolata vel spathulata, ad 17 cm. longa et 5 cm. lata, longe acuminata, basi cuneata, integra, utrinque glabra, supra intense viridia, subtus pallidiora; petioli ad 5 cm. longi. Fructus 5–7, umbellati, pedunculo 6 cm. longo suffulti; pedicelli ad 3.5 cm. longi, glabri; capsula globosa, 1.5 cm. longa, valvis 3–4 satis tenuibus lignosis velutinis, setis 1 mm. longis viridibus (in sicco fuscis) dense obtectis; semina oblonga, 8 mm. longa et 6 mm. lata, lucide brunnea, arillata.

Tree to 14 m. high; trunk 30 cm. in diameter, with gray smooth bark; branches glabrous with scattered lenticels; leaves oblong-lanceolate to spathulate, long acuminate, cuneate at base, entire along the margins, to 17 cm. long, 5 cm. broad, glabrous on both surfaces, dark green above, lighter below; petiole to 5 cm. long; fruit 5–7, umbellate, on a common peduncle to 6 cm. long, pedicels to 3.5 cm. long, glabrous; capsule globose, 1.5 cm. long, valves 3–4, rather thin, woody, velvety, covered with dense green (brown when dry) bristles 1 mm. long; seeds oblong, shining brown, 8 mm. long, 6 mm. broad, arillate.

KWANGSI: Bako shan, W. Peseh, *R. C. Ching*, Sept. 17, 1928 (type).

Allied to *S. tomentosa*, its capsules being covered with short bristles and not spiny, but differing from it in its branchlets leaves and peduncles and pedicels being all glabrous, and the fruit smaller.

***Ostrya Liana*, sp. nov.**

Arbor 16-metralis; truncus 60 cm. diam., cortice cinereo-nigro longitudinaliter fissus obtectus; rami ramulique glabri. Folia tenuia, membranacea, elliptico-ovata, 4–7.5 cm. longa et 2–4 cm. lata, acuta vel acuminata, basi leviter cordata vel rotundata, dupliciter et irregulariter serrata, supra glabra, subtus secundum venas puberula ceterum glabrescentia, venis utrinque 12–15; petioli graciles, 1 cm. longi, tomentelli. Inflorescentia mascula immatura 6–8 mm. longa, oblonga, bracteis acutis glabris lucidis. Racemi fructiferi circiter 2 cm. longi, fructibus 8–10, pedunculo 2–2.5 cm. longo; fructus 1–1.5 cm. longi et 6 mm. lati, utriculo compresso elliptico-ovato, apice acuto obliquo; nuculae ovatae, compressae, 7 mm. longae, lucide luteo-virides, apice glabrae.

Tree 16 m. high; trunk 60 cm. in diam., bark grayish black, longitudinally fissured; branches and branchlets glabrous; leaves thin, membranaceous, elliptic-ovate, 4–7.5 cm. long, 2–4 cm. broad, acute to acuminate at apex, slightly cordate to rounded at base, doubly and irregularly serrate along the margins, glabrous above, glabrescent except puberulous along the veins beneath, with 12–15 pairs of veins; petiole slender, 1 cm. long, tomentulous; immature staminate inflorescence 6–8 mm. long, oblong, with glabrous shining pointed scales; infrutescence about 2 cm. long, peduncle 2–2.5 cm. long, with 8–10 fruits, fruit 1–1.5 cm. long, 6 mm. broad, utricles laterally compressed, elliptic-ovate, with an oblique pointed apex; nutlets laterally compressed, ovate, 7 mm. long, shining yellowish green, glabrous at the apex.

CHIHLI: Eastern Tomb, *Cheng Fan Li*, No. timber no. 3, Sept. 15, 1929 (type).

Allied to *O. japonica* Sarg., differing in the much smaller fruits and shorter fruit clusters, and nearly glabrous lower surfaces of the leaves.

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NEW SPECIES AND A NEW GENUS FROM EAST AFRICA

J. MILDBRAED

THE plants collected in Central and East Africa from December, 1926 to April, 1927 by Dr. D. H. Linder who accompanied the Expedition of the Harvard Institute of Tropical Biology and Medicine to Tropical Africa as collector for the Arnold Arboretum had been sent, with the exception of the Orchids, to the Botanical Museum at Berlin-Dahlem for determination.¹ As the expedition after having spent about five months in Liberia traversed rather hurriedly regions of the Belgian Congo and East Africa which were already fairly well explored botanically, the collection comprising about 800 numbers from this part of Africa did

¹ The collections made in Liberia have been sent to Kew where they are being determined in connection with the publication of the Flora of Tropical West Africa by Hutchinson & Dalziel. Descriptions of new species wholly or partly based on Linder's plants have been published in the Kew Bulletin for 1928, p. 380 and 400 and for 1929, p. 20–23.—Ed.